

AMENDMENTS TO THE CLAIMS

Claims 1-20 (Canceled)

Claim 21 (New): A method of preventing footrot and liver abscesses in bovines caused by infection with *Fusobacterium necrophorum* bacteria, wherein said method is comprised of:

- (a) growing an isolate of *Fusobacterium necrophorum* bacteria, taken from a bovine species, for successive generations in a suitable growth medium for a period of time equal to between 10 hours and 18 hours to form an *Fusobacterium necrophorum* bacteria whole cell culture, with said bacteria culture having a bacterial count population equal to at least 1×10^5 CFU/ml;
- (b) forming a vaccine by combining said bacteria culture with an amount of diluent; and
- (c) administering at least one dosage of said vaccine intramuscularly or subcutaneously to a bovine subject, with said dosage equal to between 1 ml and 5 ml.

Claim 22 (New): The method of Claim 21 wherein two dosages of said vaccine are administered.

Claim 23 (New): A method for producing a whole cell culture vaccine against bovine *Fusobacterium necrophorum* bacteria, comprising:

- (a) growing an isolate of *Fusobacterium necrophorum* bacteria isolated from a bovine in a suitable medium for a period of time ranging from 11 hours to 14 hours at a temperature ranging from 33°C to 40°C to form an *Fusobacterium necrophorum* bacteria culture, with said bacterial culture having a bacterial count population equal to at least 1×10^5 CFU/ml;
- (b) terminating growth of said bacterial culture with formaldehyde during the period of time to form a terminated whole cell culture; and
- (c) adding a vaccine adjuvant to said terminated whole cell culture to form said whole cell culture vaccine.

Claim 24 (New): The method of Claim 23 wherein said method comprises mixing said whole cell culture vaccine with an amount of diluent to form a vaccine inoculum.

Claim 25 (New): The method of Claim 23 wherein said vaccine adjuvant is mixed with said terminated whole cell culture in an amount equal to between about 18% and about 24% by volume of said terminated whole cell culture.

Claim 26 (New): The method of Claim 25 wherein said vaccine adjuvant is selected from the group consisting of oils, aluminum salts, polymers, dimethyldodecylammonium bromide, poxvirus proteins, block co-polymers, triterpenoid glycosides, detergents, and combinations thereof.

Claim 27 (New): The method of Claim 26 wherein said oil vaccine adjuvant is selected from the group consisting of mineral oils, vegetable oils, animal oils, and combinations thereof.

Claim 28 (New): The method of Claim 23 wherein said *Fusobacterium necrophorum* bacteria are a biotype A (FFN) *Fusobacterium necrophorum* isolate taken from a bovine species member and identified as ATCC Accession No. PTA-197.

Claim 29 (New): The method of Claim 23 wherein said *Fusobacterium necrophorum* bacteria are a biotype A (FFN).

Claim 30 (New): The method of Claim 23 wherein said formaldehyde is added in an amount equal to about 0.4% by volume of said bacteria culture.

Claim 31 (New): The method of Claim 23 wherein said bacteria culture has a bacteria count population equal to at least 1×10^8 CFU/ml.

Claim 32 (New): A method of producing a vaccine inoculum for immunizing bovines against a biotype A (FNN) *Fusobacterium necrophorum* bacterial infection, comprising the steps of

- (a) isolating a biotype A *Fusobacterium necrophorum* bacteria from a bovine species member;
- (b) growing successive generations of said *Fusobacterium necrophorum* bacteria anaerobically in a broth comprised of brain-heart infusion broth growth medium at a temperature ranging between about 35°C and about 38°C for a period of time ranging from 11 hours to 14 hours until an optical bacterial cell density equivalent to 0.8 at 540 nm and a volume of at least 1×10^5 CFU/ml is reached to form a bacterial cell culture;
- (c) inactivating said bacterial cell culture during the period of time by adding to said bacterial cell culture a formaldehyde solution to form a harvested whole cell bacterial culture; and
- (d) adding to said harvested whole cell bacterial culture an amount of diluent comprised of an oil-based adjuvant, with said oil-based adjuvant added in an amount equal to between about 18% and about 24% by volume of said harvested whole cell bacterial culture to form said vaccine inoculum.

Claim 33 (New): A vaccine for establishing resistance to *Fusobacterium necrophorum* bacteria in bovines, when members of the bovine species are inoculated with said vaccine, wherein said vaccine comprises a whole cell culture of *Fusobacterium necrophorum*, and an adjuvant, wherein said culture is derived from a *Fusobacterium necrophorum* isolate taken from a bovine species, and grown for a period of time ranging from about 11 hours to about 15 hours and a time sufficient for said culture to have a CFU count equal to at least 1×10^8 CFU/ml, and wherein growth of said culture is terminated with formaldehyde after said period of time.

Claim 34 (New): The vaccine of Claim 33 wherein said vaccine comprises said adjuvant in an amount equal to between about 18% and about 24% by weight of said whole cell culture.

Claim 35 (New): The vaccine of Claim 34 wherein said adjuvant is an oil based adjuvant.